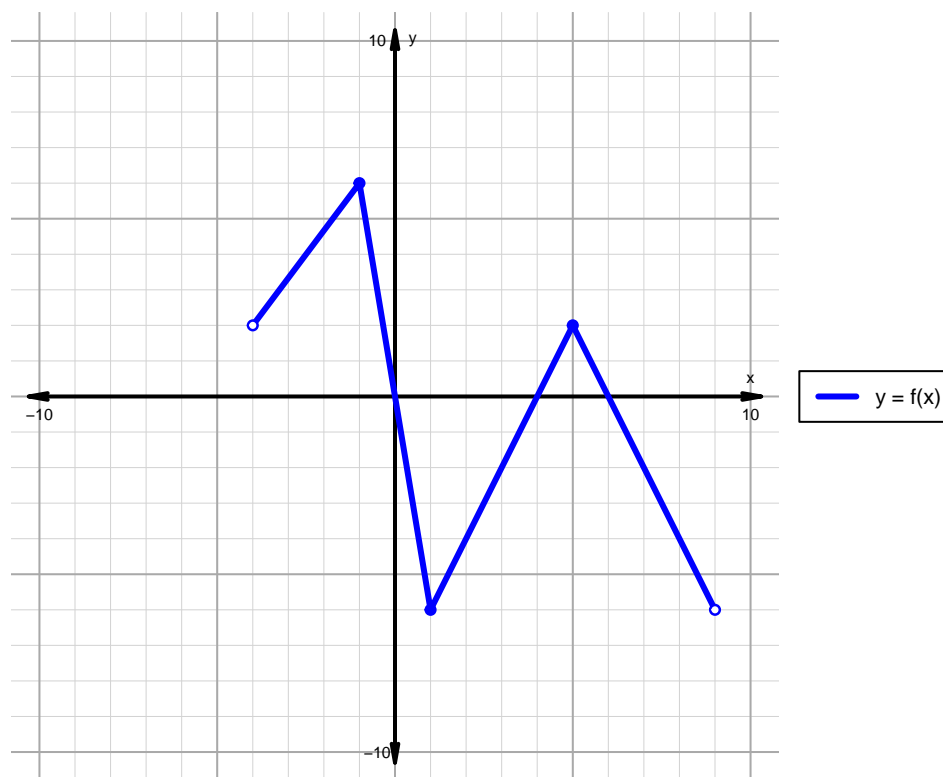


Name: \_\_\_\_\_

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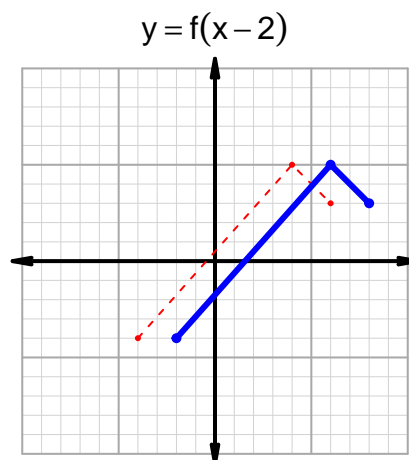
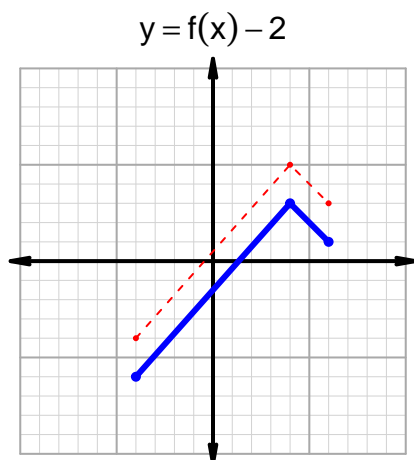
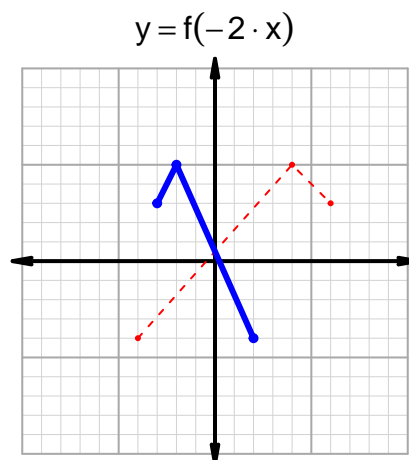
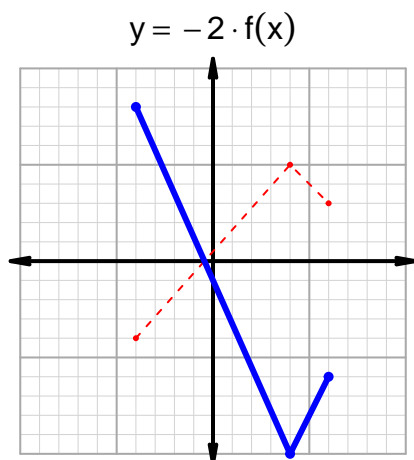
**Intervals, Transformations, and Slope Solution (version 32)**1. The function  $f$  is graphed below.

Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

| Feature    | Where                  |
|------------|------------------------|
| Positive   | $(-4, 0) \cup (4, 6)$  |
| Negative   | $(0, 4) \cup (6, 9)$   |
| Increasing | $(-4, -1) \cup (1, 5)$ |
| Decreasing | $(-1, 1) \cup (5, 9)$  |
| Domain     | $(-4, 9)$              |
| Range      | $(-6, 6)$              |

## Intervals, Transformations, and Slope Solution (version 32)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 48$  and  $x_2 = 93$ . Express your answer as a reduced fraction.

| $x$ | $g(x)$ |
|-----|--------|
| 22  | 93     |
| 48  | 22     |
| 85  | 48     |
| 93  | 85     |

$$\frac{f(93) - f(48)}{93 - 48} = \frac{85 - 22}{93 - 48} = \frac{63}{45}$$

The greatest common factor of 63 and 45 is 9. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{7}{5}$$